Local Hazard Mitigation Plan ANNEX
Solano County Water Agency

Introduction

The boundaries of the Solano County Water Agency include the entire County of Solano, the property of the University of California at Davis in Yolo County and approximately 2,800 acres of Reclamation District No. 2068 that is in Yolo County. The Agency was formed in 1951 by an act of the State Legislature as the "Solano County Flood Control and Water Conservation District". The population in the Agency service area is approximately 422,000. Area of the County is 823 square miles.

As originally established, the Board of Supervisors of Solano County was the governing board (ex-officio) of the Solano County Flood Control and Water Conservation District (SCFC&WCD). As with other countywide flood control and water conservation districts established about that same time, the SCFC&WCD was given water supply and flood control authorities. The first major action of the SCFC&WCD was to contract with the United States Bureau of Reclamation (USBR) for water supply from the Solano Project.

In 1988, the legislative act was changed to modify the governing board of the SCFC&WCD and to make other minor updates to the act. In 1989 the name of SCFC&WCD was changed to the "Solano County Water Agency" (SCWA).

The change in the governing board of SCWA was very significant. In addition to the five members of the Board of Supervisors, the mayors from all seven cities in the County were added and a board member from each of the three agricultural irrigation districts (Solano Irrigation District, Maine Prairie Water District and Reclamation District No. 2068) was added. The three agricultural districts were added because those districts provide retail water service to their constituents.

The authorities of SCWA fall into two main categories: water supply and flood control. The water supply function consists of providing wholesale, untreated water supply to cities, districts and state agencies. Additionally, SCWA leads efforts to protect rights to existing sources of water and participates in efforts to secure new sources of water for water supply reliability and future growth in the County.

The Agency's water supplies are from the Solano Project and the North Bay Aqueduct. The Solano Project is owned by the United States Bureau of Reclamation and consists of Monticello Dam (with a capacity of 1.6 Million acre feet), the Putah Diversion Dam and the 33 mile Putah South Canal. The North Bay Aqueduct is part of the State Water Project and is a 23 mile underground pipeline with two pumping station that takes water from the Delta.

For flood control, SCWA is responsible for operations and maintenance of the Ulatis Flood Control Project and the Green Valley Flood Control Project. The Ulatis Project consists of 57 miles of channel serving the central eastern part of the County. The Green Valley Project

consists of 6 miles of channel serving a part of the Fairfield/Cordelia area. The SCWA also has authority to deal with all flood control matters within the boundaries of SCWA.

SCWA budget is about $23 million per year. SCWA has 10 employees and contracts with other public agencies to perform operations and maintenance of its water supply and flood control facilities.

The Planning Process

This process of preparing this Local Hazard Mitigation Plan Annex (Annex) is familiar to the Solano County Water Agency. The Agency has worked with the US Bureau of Reclamation on emergency preparedness for the Solano Project and with the County Office of Emergency Services on flooding emergencies. In addition, the Agency routinely enforces the requirements of the California Environmental Quality Act (CEQA) requirements (which, since 1988, have required mitigation for identified natural hazards). The Agency's effort has focused on building on these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Many of the activities conducted by the Agency were fed into the planning process for the multi-jurisdictional plan through Solano County. The Agency and the County provided information on facilities that are viewed as "critical" to ABAG.

Key Agency staff met to identify and prioritize mitigation strategies appropriate for the Agency. Staff involved in this meeting included the General Manager, The Supervising Water Resources engineer and Supervising Water Resource Scientist. The Agency provided the opportunity for the public to comment on the DRAFT mitigation strategies selected by Agency staff at the Agency Board of Directors meeting on March 8, 2007. The resolution adopting the plan and strategies was approved by the Board of Director's on April 12, 2007. The mitigation strategies will become an implementation appendix to the Agency's Integrated Regional Water Management Plan.

Hazard and Risk Assessment

The ABAG multi-jurisdictional Local Hazard Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought). These hazards also impact this community.

While the Agency has undertaken a number of general hazard mapping activities, all of these maps are less detailed and are not as current as those shown on the ABAG website at **http://quake.abag.ca.gov/mitigation/**.

The Agency has had a number of flooding incidents throughout the County, the most recent occurring in December of 2002 and December of 2005.

Information on disasters declared in Solano County is at **http://quake.abag.ca.gov/mitigation/disaster-history.html.**

The Agency examined the hazard exposure of Agency facilities based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickdbh2.html**. Of the 523,803 acres within the Agency boundaries, the following findings are made,

- Earthquake faulting - 3,589 acres are in California Geological Survey study zones. The only currently mapped active fault that could produce surface rupture in the County is the Concord-Green Valley fault.
- Earthquake shaking – While 69,041 acres are in the two highest categories for earthquake shaking potential, 3,905 acres are in the lowest shaking potential category. The County is in the vicinity of several known active and potentially active earthquake faults. These include the Hayward, Concord/Green Valley, North Hayward and Mt. Diablo faults.
- Earthquake-induced landslides – the California Geological Survey has not mapped Solano County for earthquake induced landslides. The hazard is assumed to be similar to that for rainfall-induced landslides, discussed below.
- Earthquake liquefaction – 257,469 acres are in areas of moderate, high or very high liquefaction susceptibility.
- Tsunamis – While portions of Solano County are at or below sea level, the areas are far enough away from the ocean that they are not considered particularly vulnerable to tsunamis. For example, if a 42-foot tsunami arrived at the Golden Gate, it would be approximately 4 feet at the north end of the Bay near the cities of Vallejo on the western edge of the Agency's service area. The Agency will reexamine this issue when maps are issued by the California Office of Emergency Services. A contract for this mapping has been issued, but the mapping is not yet complete.
- Flooding – 158,975 acres are in the 100-year flood plain, while an additional 27,158 acres are in 500 year flood plain or "other concerns".
- Landslides – 25,057 acres in areas "mostly a landslide area" and 143,352 acres in "few landslides".
- Wildfires – 99,130 acres are subject to high, very high, or extreme wildfire threat, and 49,485 acres are in wildland-urban interface threat areas.
- Dam Inundation – 134,553 acres are subject to dam inundation.
- Drought – all 523,803 acres are subject to drought.

The Agency also examined the hazard exposure of infrastructure based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickdbh2.html**.

- Earthquake faulting – The Putah South Canal of the Solano project crosses the Concord/Green Valley fault. The Green Valley Flood Control Project is adjacent to the Green Valley Fault. No other infrastructure is impacted by known faults.
- Earthquake shaking – Ulatis and Green Valley Flood Control projects are in a moderate shaking zone. Solano Project Dams are in a moderate to low zone. The Putah South Canal runs through a high intensity zone related to the Green Valley Fault, but the rest of the Canal is in the moderate zone.

- Earthquake-induced landslides – the California Geological Survey has not completed mapping of this hazard in the Agency service area. The Putah South Canal has some areas prone to landslide damage.
- Earthquake liquefaction – Ulatis Flood Control Project is in a moderate to low zone except for the east part of the project that is in a high zone. Green Valley Flood control Project is in a low zone. Solano Project Dams are in a very low zone. Putah South Canal has a small section in a high zone, but most of canal is in a moderate or low zone.
- Tsunamis – Agency is not within mapped tsunami zones.
- Flooding – Parts of Ulatis Flood Control Project are in 100 year flood zones. Parts of Putah South Canal cross some 100 year flood zones.
- Landslides – Parts of the Putah South Canal cross some area susceptible to landslides.
- Wildfires – Some infrastructure are in high and moderate wildfire areas, but the infrastructure are not susceptible to wildfire damage.
- Dam Inundation – The north part of the Ulatis Flood Control Project is in a dam inundation zone. Parts of the Green Valley Flood Control Project are in a dam inundation zone. The Putah South Canal crosses two smaller dam inundation zones.
- Drought – is not a hazard for Agency infrastructure.

There 76 claims of repetitive loss from 28 properties in the County based on the information at **http://quake.abag.ca.gov/mitigation/pickflood.html**. The Agency has conducted watershed studies in several watersheds that are prone to flooding. The Agency has identified some areas that suffer from repetitive flooding and plan to perform some cost-benefit analyses to determine the extent to which mitigation is appropriate in these areas. For example, properties along Sweeney, Ledgewood, and Suisun Creek are subject to repetitive losses.

Drought is addressed through the Agency's Urban Water Management Plan and Urban Water Management Plans of the cities in Solano County.

The Agency plans to continue to work with ABAG to develop specific information about the kind and level of damage to buildings, infrastructure, and critical facilities which might result from any of the hazards previously noted.

As these impacts are not fully developed, the Agency has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking), flooding and landslides (including unstable earth) pose a significant risk for potential loss.

Mitigation Activities and Priorities

As a participant in the ABAG multi-jurisdictional planning process, Solano County Water Agency staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The list was discussed at a meeting of Agency managers on February 8, 2007. At the meeting, all of the mitigation strategies were reviewed. The tentative decision on priority was made based on a variety of criteria, not simply on an

economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one. In addition, several of the strategies are existing Agency programs.

The draft priorities were then provided to the Agency Board of Directors on April 12, 2007. The public was provided with an opportunity to comment on the DRAFT priorities. The final strategies (as shown in the attached Table) will become an implementation appendix to the Agency's Integrated Regional Water Management Plan.

Based on the hazard exposure information described above, the Agency has determined the following priorities for mitigation:

1. Detention basins to protect Ulatis Flood Control Project

In several areas the Ulatis Flood Control Project overtops its banks and flood adjacent homes and agricultural areas. Due to constraints in increasing the capacity of the flood control channels, upstream detention basins are needed to capture and hold flows upstream of the Ulatis Flood Control Project.

2. Landslide Protection for the Putah South Canal

The Putah South Canal crosses several areas of known landslide hazard. Landslides into the canal could block crucial water deliveries. Modifications to lands surrounding these areas or covering of the canal is necessary.

3. **Capacity Increase for Green Valley Project**

The Green Valley Flood Control Project was designed for a 40 year storm. Increases in precipitation in recent years has lowered the level of protection of the Project. Improvements to the outlet of the Project and possible levee improvements are desirable.

4. Capacity Increase for Ulatis Flood Control Project

In several areas the Ulatis Flood Control Project overtops its banks and flood adjacent homes and agricultural areas. In some of these areas, particularly agricultural areas there are opportunities to widen the channel to increase flood conveyance.

5. Home Raising Projects - Ulatis Flood Control Project

In some rural residential areas that are tributary to the Ulatis Flood Control Project, there are homes that are inundated with flood flows, due to limited capacity of tributaries to the Ulatis Flood Control Project. Home raising may be a cost effective way to mitigate flood damage.

The Plan Maintenance and Update Process

The Agency's General Manager will ensure that ***monitoring*** of this Annex will occur. The plan will be monitored on an on-going basis. However, the major disasters affecting our community, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used. Finally, the Annex will be a discussion item on the agenda of the meeting of Agency managers at least once a year in April. At that meeting, the managers will focus on ***evaluating*** the Annex in light of technological and political changes during the past year or other significant events. This group will be responsible for determining if the plan should be updated.

The Solano County Water Agency is committed to reviewing and ***updating*** this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. The Agency General Manager will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the Agency again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including the County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The ***public*** will continue to be involved whenever the plan is updated, and as appropriate during the monitoring and evaluation process. Prior to adoption of updates, the Agency will provide the opportunity for the public to comment on the updates. A public notice will be posted prior to the meeting to announce the comment period and meeting logistics.